

THE *GREEN WAVE* INITIATIVE

An Environmental Investment Initiative Proposed By
California Treasurer Phil Angelides
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FACT SHEETS

1. Demand Environmental Accountability and Disclosure

- **Among the 20 biggest corporate emitters of greenhouse gases, 17 report that they have conducted a board-level review of climate change**, according to a study by CERES. (Source: Douglas G. Cogan, "Corporate Governance and Climate Change: Making the Connection," Investor Responsibility Research Center (June 2003).)
- **Weather damage, pollution, and industrial and agricultural losses related to global warming could cost \$300 billion annually by 2050**, according to estimates by the German insurance company Munich Re. (Source: Gerhard Berz, Munich Re Geoscience Research Group, "Insuring Against Catastrophe," *Our Planet*, United Nations Environmental Programme (February 2001), as cited in Amy Cortese, "As the Earth Warms, Will Companies Pay?" *New York Times* (August 18, 2002).)
- **The water industry alone could face nearly \$47 billion in additional costs within the next 50 years due to climate change**, according to the head of the Geoscience Research Group at Munich Re, one of the world's largest re-insurers. (Source: Gerhard Berz, Munich Re Geoscience Research Group, "Insuring Against Catastrophe," *Our Planet* (United Nations Environmental Programme) (February 2001).)
- **In 2001, the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) issued an international standard that enables businesses to uniformly report their emissions of greenhouse gases.** The standard, called the Greenhouse Gas Protocol Initiative or "GHG Protocol," was developed over a three-year period by a partnership of over 350 individuals from corporations, non-profit organizations, and governments. Companies that use or otherwise rely upon the GHG Protocol to measure and report their emissions include Ford Motor Company, Eastman Kodak, IBM, General Electric, Lockheed Martin Corporation, U.S. Steel Corporation, and Verizon Communications. (Source: For a complete list of Protocol users, see <http://www.ghgprotocol.org/standard/users.htm>.)
- **Concentrated risk argues for the need for better investor intelligence and information**, illustrated by the fact that a small number of companies appear to face the greatest potential regulation and litigation. Only 20 petroleum and coal companies

produce products that generate nearly half of the world's carbon emissions; 13 companies manufacture approximately 90 percent of the vehicles driven in the U.S.; 100 power generators are responsible for an estimated 88 percent of the greenhouse gas emissions produced by the generation of electricity in the U.S. (Source: Diane Wittenberg, California Climate Action Registry.)

- **Nearly three-quarters of companies that were fined more than \$100,000 for environmental violations failed to report such damages in their annual filings**, according to a 1998 EPA study. (Source: U.S. Environmental Protection Agency, "Guidance on Distributing the Notice of SEC Registrants' Duty to Disclose Environmental Legal Proceedings in EPA Enforcement Actions" (1998), as cited in Susannah Blake Goodman, Jonas Kron, Tim Little, *The Environmental Fiduciary: The Case for Incorporating Environmental Factors into Investment Management Policies*, The Rose Foundation for Communities and the Environment (2002).)
- **As much as 15 percent of the total market capitalization of major companies may be put at risk by climate change**, according to Innovest Strategic Value Advisors, an investment research and advisory firm specializing in analyses of corporate performance on environmental, social, and strategic governance issues. (Source: Innovest Strategic Value Advisors, *Carbon Finance Benchmarking of the U.S. Electric Utilities Industry* (June 2001), as cited in Amy Cortese, "As the Earth Warms, Will Companies Pay?" *New York Times* (August 18, 2002).)
- **Shareholders in leading oil and gas companies could lose as much as 5 to 7 percent of the value of their investments because of regulatory and other efforts to respond to climate change**, according to the World Resources Institute. (Source: World Resources Institute, *Changing Oil: Emerging environmental risks and shareholder value in the oil and gas industry* (July 2002).)
- **The discounted present value of potential carbon liabilities – economic risks that a company faces relative to its sector due to carbon emissions – within a single emissions-intensive manufacturing firm could represent as much as 40 percent of its entire market capitalization** under certain plausible high-risk scenarios, according to the Carbon Disclosure Project, an international consortium of institutional investors representing \$4.5 trillion in assets. (Source: Carbon Disclosure Project, "Carbon Finance and the Global Equity Markets," (2003).)
- **Greenhouse gas emitters could face heightened litigation costs**, similar to tobacco, asbestos, mold, and manufacturers of products or processes that lead to environmental and public health harms, as awareness of the magnitude of climate change emerges. (Source: Vanessa Houlder, "Climate Change Could be Next Legal Battlefield," *Financial Times* (July 14, 2003).)

2. Target Private Investment in Environmental Technologies

- **Clean technology has emerged as the sixth largest venture investment category in the U.S. and Canada**, behind information technology, software, biotechnology, health care, and telecommunications. According to Cleantech Venture Network, LLC, in 2002, investments in energy-related clean technologies represented nearly half (45.5 percent) of all clean technology investments. The remaining investments in clean technologies included enabling technologies -- technologies developed by biological, computational, and physical scientists and engineers that enable better use of natural resources and greatly reduce ecological impact (14 percent); materials and nanotechnology (13.8 percent), materials recovery and recycling (8 percent), and water-related technologies (4 percent). (Source: Cleantech Venture Network, LLC, *Venture Monitor Q1 2003*.)
- **Venture capital investments in clean technologies were estimated to reach \$1.3 billion for the year 2003.** Clean technology captured 7.4 percent of the \$4.3 billion in venture capital invested overall in the U.S. during the third quarter of 2003. In 2002, just under \$1.1 billion in venture capital was invested in 179 clean technology companies, according to Cleantech Venture Network, LLC. (Source: Cleantech Venture Network, LLC, *Venture Monitor Q1 2003*.)
- **The global market for renewable energy is estimated to reach as much as \$625 billion by 2010, and \$1.9 trillion by 2020**, according to estimates by the World Energy Council. (Source: Carbon Disclosure Project, "Carbon Finance and the Global Equity Markets," (2003).)
- **California was once the leading home of wind and solar manufacturing; today, jobs in those industries are mostly found abroad.** For example, 45,000 people within the European Union are now employed in wind power manufacturing. The European Wind Energy Association estimates that electricity generated by windmills will increase more than 700 percent between 2002 and 2010 in Europe. (Source: Peter Asmus, *Reaping the Wind: How Mechanical Wizards, Visionaries, and Profiteers Helped Shape Our Energy Future*, as cited in Clean Edge, *Bringing Solar to Scale: A Proposal to Enhance California's Energy, Environmental, and Economic Security* (July 2003).)
- **For every megawatt of solar power, 35.5 jobs are created in manufacturing, installation, servicing, sales, and marketing**, according to the Renewable Energy Policy Project. The worldwide solar PV market, including sales of modules, system components, and installations, totaled \$3.5 billion in 2002 and is projected to rise to \$27.5 billion by 2012, according to Clean Edge research. Annual global manufacturing output of solar PV modules has more than tripled in the past four years. Japan, the global solar manufacturing leader, accounted for nearly half of the manufacturing output in 2002, expanding fivefold since 1998. The U.S., the second largest producer, nearly doubled its production in just four years. (Source: Solar Catalyst Group, "Solar Opportunity Assessment Report," (December 2003).)

3. Invest in Stocks of Environmentally Responsible Companies

- **Companies that engage in environmentally responsible practices can achieve better financial results, according to a number of studies.**
 - One report produced by Light Green Advisors, Inc., a Seattle-based investment advising firm, examined 20 leading empirical studies that examined the correlation between environmental and financial performance covering a 10-year range of research. Among the findings, it is reported that companies that go beyond legal compliance with environmental regulations realize stronger stock price gains and market value growth than the S&P. In contrast, laggard companies that are threatened by actual or impending environmental laws tended to experience weaker returns. (Source: Christopher J. Murphy, “The Profitable Correlation Between Environmental and Financial Performance: A Review of the Research.” Light Green Advisors, Inc. (2002).)
 - Another study, by the University of Michigan’s William Davidson Institute, analyzed data from the mid-1990s on the stock market performance and environmental policies of 89 major U.S. mining and manufacturing companies with production facilities in developing nations, finding that the market valuation of companies with strict global environmental standards was some 80 percent higher, relative to their physical assets, than that of companies using local standards for their operations. (Source: Glen Dowell, Stuart Hart, Bernard Yeung, “Do Corporate Global Environmental Standards Create or Destroy Market Value?” *Management Science*, Vol. 46, No. 8 (August 2000).)
 - Shares of companies with good sustainability records perform better than those of their less socially responsible competitors, according to a study of over 600 companies for the period December 31, 1999 to October 27, 2003, by Germany’s Oekom Research independent sustainability rating agency, in conjunction with Morgan Stanley Dean Witter. (Source: *Global Finance* (January 2004).)
 - Studies indicate that investment funds comprised of companies with superior environmental profiles tend to be more profitable than the S&P 500. Environmental screening appeared to raise, rather than reduce, financial returns of investment portfolios. (Source: See, for example, John Buffington and John Ganzi, “2000 Annual Review of Eco-Efficiency Funds,” Finance Institute for Global Sustainability (2000); Ralph Earle, *The Emerging Relationship Between Environmental Performance and Shareholder Wealth*,” Assabet Group (2000), as cited in Murphy (2002).)

- **The Domini Social Equity 400 Index has outperformed the S&P 500 on a total-return basis and on a risk-adjusted basis since its inception in May 1990.** (Source: CBS MarketWatch, January 14, 2004, quoting Peter Kinder, president of KLD Research and Analytics.)
- **Environmentally and socially screened portfolios grew by 7 percent despite the market downturn of 2001 and 2002,** moving these funds from the margins to the mainstream of the financial markets. In 2002, environmentally screened mutual funds held nearly \$29 billion in assets. (Source: Social Investment Forum, “2003 Report on Socially Responsible Investing Trends in the United States,” (updated December 2003).)

4. Audit Real Estate Portfolios to Boost Long-Term Value

- **CalPERS and CalSTRS hold more than \$16 billion in real estate holdings in 22 countries around the globe, with over half of those holdings in office and industrial space.** CalSTRS’ Real Estate Portfolio includes 15.5 million square feet of office space worth \$2.4 billion and 32.2 million square feet of industrial space valued at \$975 million. CalPERS’ Real Estate portfolio includes 16.4 million square feet of office space, worth \$2.3 billion and 95.5 million square feet of industrial space, at a value of \$2.9 billion.
- **The federal government has encouraged energy efficiency through the national Energy Star program.** Companies – including product manufacturers, builders, and retailers – that actively participated in the Energy Star program through voluntary partnerships with the U.S. Environmental Protection Agency outperformed companies that were not involved in the Energy Star program by more than 12 percent during the two-year period of 2000-2001. More than 15,000 of the nation’s buildings have been rated using EPA’s national energy performance rating system, and more than 1,100 buildings have earned the Energy Star label for superior energy performance. (Source: Innovest Strategic Value Advisors, “Energy Management and Investor Returns: The Real Estate Sector” (October 2002).)
- **California’s tough energy efficiency standards have resulted in substantial cost savings.** This efficiency is due in part to stringent energy efficiency standards for buildings and appliances that have been in effect and periodically updated since 1978. Through the Energy Efficiency Standards for Residential and Nonresidential Buildings (also known as Title 24 building standards) along with standards for energy efficient appliances, California has saved more than \$20 billion in electricity and natural gas costs since 1978. It is estimated California will save \$57 billion by 2011 due to these standards. (Source: California Energy Commission, <http://www.energy.ca.gov/title24/index.html>.)

- **Real estate companies with above average energy management performance, taken as a group, tended to outperform below average companies by approximately 34 percent on Wall Street over the two-year period of 2000-2001,** according to research conducted by Innovest Strategic Value Advisors. (Source: Innovest Strategic Value Advisors, “Energy Management and Investor Returns: The Real Estate Sector”(October 2002).)
- **Companies owning energy-efficient buildings demonstrate savings.** For example, Southern California’s largest landlord of commercial office space, which holds 129 properties consisting of 215 buildings and approximately 18.8 million net rentable square feet, now owns the most energy-efficient buildings in a single portfolio in the nation. As a result, the firm has reduced its annual energy costs by approximately \$4.8 million through energy efficiency measures. Another example is provided by one of the nation’s largest owners of office buildings (700 office buildings nationwide), which is installing distributed generation equipment at 12 of its buildings as a pilot project. While each system costs as much as \$5 million, the owner believes it can recover the cost over time by reducing the amount of electricity it has to buy from the grid during times of peak demand. (Source: Innovest Strategic Value Advisors, “Energy Management and Investor Returns: The Real Estate Sector,” (October 2002); Jeffrey Ball, “Energizing Off-Grid Power,” *Wall Street Journal* (August 18, 2003).)
- **A minimal upfront investment of about 2 percent of construction costs in sustainable building practices and products typically yields life cycle savings of more than 10 times the initial investment,** according to a recent study commissioned by California’s Sustainable Building Task Force. (Source: Greg Kats et al., *The Costs and Financial Benefits of Green Buildings: A Report to California’s Sustainable Building Task Force* (October 2003).)